

## ABSTRACT OF THE DISCLOSURE

### METHOD AND APPARATUS FOR EFFICIENT DERIVATION OF MODULO ARITHMETIC FOR FREQUENCY SELECTION

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A method and apparatus for efficiently deriving modulo arithmetic solutions for frequency selection in transceivers. A frequency for communication between a wireless user interface device and a wirelessly enabled host is generated by calculating a modulo solution for an input variable. In some embodiments of the invention, the communication between the user input device and the wirelessly enabled host complies with the Bluetooth wireless communication standard. For the embodiments of the present invention relating to communications systems implementing the Bluetooth standard, a method and apparatus is disclosed for generating communication frequencies based on modulo 23 and modulo 79 solutions input variables. The method and apparatus of the present invention can generate the communication frequency with a minimum number of calculations using simple binary addition, as opposed to prior art methods that generally require numerous iterations and complex calculations.